

REMARKS

Claims 1-22 are pending in the present application. Claims 1 and 12 are independent.

Rejections under 37 C.F.R. §103(a)

Claims 1-4, 6 and 7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,707,595 to Meyers (hereinafter "Meyers"). This rejection is respectfully traversed.

Independent claim 1 recites a light-emitting diode, which is disposed at a thermally conductive housing base and is adapted to emit infrared light through a hollow of the housing to an aspheric lens. These features are neither taught nor rendered obvious by Meyers.

Meyers discloses an invisible light beam projector that includes a diode 30 mounted on a circuit board 48 at an intermediate position of a housing 20 of the projector. Meyers further discloses a meniscus lens 36 for magnifying a beam from the diode 30, and a periscopic lens 34 for focusing the magnified light.

Thus, Meyers fails to disclose a light-emitting diode disposed on a thermally conductive base. Instead, Meyers's diode is disposed at a circuit board 48. To reduce heat, Meyers discloses using a pulsating diode 30, which is turned on a small percentage of the time (e.g., 10 to 20 percent) and turned

off the rest of the time. Accordingly, Meyers does not teach, or even suggest, disposing the diode at a thermally conductive housing to dissipate heat.

Also, the Examiner apparently interprets the lens 34 of Meyers as rendering obvious the claimed aspheric lens, because the lens 34 performs the function of focusing light (Office Action, page 2). However, even assuming for argument's sake that the periscopic lens 34 renders obvious the use of an aspheric lens (which is not conceded by Applicant), Meyers still fails to disclose that this light is radiated from the diode 30 to the lens 34 through a hollow. Rather, Meyers discloses that the light is radiated through another lens 36 before reaching the periscopic lens 34.

Accordingly, Meyers fails to disclose or render obvious the claimed light-emitting diode, which is disposed at a thermally conductive base and emits light through a hollow to an aspheric lens. Thus, Applicant respectfully submits that claim 1 is allowable at least for these reasons. Applicant further submits that claims 4, 6 and 7 are allowable at least by virtue of their dependency on claim 1.

Claims 5, 10 and 11 stand rejected under 35 U.S.C. §103 as being unpatentable over Meyers in view of U.S. Patent No. 4,738,534 to Houseman et al. (hereinafter "Houseman"). Applicant respectfully submits that Houseman fails to remedy the deficiencies set forth above in connection with independent

claim 1. Thus, Applicant submits that claim 5, 10 and 11 are allowable at least by virtue of their dependency on claim 1.

Claims 8, 12-16 and 18-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Meyers in view of U.S. Patent No. 5,763,882 to Klapper et al. (hereinafter "Klapper"). This rejection is respectfully traversed.

Independent claim 12 recites features similar to those identified above with respect to independent claim 1. Applicant respectfully submits that Klapper fails to remedy the above-noted deficiencies of Meyers.

Independent claim 12 recites a thermal electric cooler for dissipating heat generated by the light-emitting diode. In the Office Action, the Examiner admits that Meyers fails to disclose a thermal electric cooler, but asserts that it would have been obvious to modify Meyers in order to incorporate the thermal electric cooler disclosed by Klapper "in order to increase sensitivity" (Office Action, page 5).

Applicant respectfully submits that the Examiner has failed to provide proper motivation for modifying Meyers to include the cooler disclosed by Klapper. Instead, the Examiner has made a broad conclusory statement that implementing a thermal electric cooler would increase sensitivity. The Examiner has identified no teaching in the prior art, or provided any objective evidence, supporting this assertion.

Furthermore, Applicant respectfully submits that the configuration of Meyers' projector is not satisfactory for implementing Klapper's disclosed cooling system, which includes a thermoelectric element, a temperature transducer, a voltage reference and an error amplifier (see Klapper, column 4, lines 55-60). Instead, Meyers discloses the use of a pulsating diode 30 in order to reduce the heat generated in the projector. Thus, Meyers already provides a solution to the problem of overheating.

Accordingly, one of ordinary skill in the art would not have been motivated to modify Meyers in view of Klapper, as proposed by the Examiner, because such modifications could not be made without substantial reconfiguration that would change the principle of operation to Meyers' system. Such a combination cannot support a *prima facie* case of obviousness (see MPEP §2143.02).

For at least the reasons discussed above, Applicant respectfully submits that independent claim 12 is allowable over the proposed combination of Meyers and Klapper. Furthermore, Applicant submits that claims 13-16 and 18-20 are allowable at least by virtue of their dependency on claim 12.

Since the proposed Meyers/Klapper modification is improper, Applicant respectfully submits that Klapper does not remedy the deficiencies of Meyers set forth above with respect to independent claim 1. Therefore, Applicant

submits that claim 8 is allowable at least by virtue of its dependency on claim 1.

Claims 17, 21 and 22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Meyers in view of Klapper, as applied to claims 12-16 and 18-20, and further in view of Houseman. Applicant respectfully submits that Houseman fails to remedy the deficiencies of the Meyers/Klapper combination as discussed above with respect to independent claim 12. In other words, Houseman neither discloses a thermal electric cooler, nor provides any teaching or motivation for combining Meyers and Klapper. Thus, Applicant submits that claims 17, 21 and 22 are allowable at least by virtue of their dependency on independent claim 12.

Conclusion

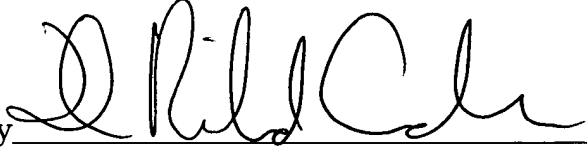
In view of the above remarks, Applicant respectfully requests the Examiner to withdraw the various rejections and issue a Notice of Allowance in connection with the presently pending claims. Should the Examiner determine that any outstanding matters remain in this application, Applicants request the Examiner to contact Jason Rhodes (Reg. No. 47,305) at (703) 205-8000 in order to discuss this application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to debit Deposit Account No. 02-2448 for any additional fee

required under 37 C.F.R. §1.16 or §1.17, particularly extension of time fees, or to credit said Deposit Account for any overpayment of fees.

Respectfully submitted,

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